

CLAIMS

1. A telecommunications method using non-geostationary Earth satellites (S_1 , S_2 , S_3 and S_4) and in which the Earth is divided into areas (20_i) inside which calls involving terminals in said area are relayed by a management station (22) and each terminal (24_1 , 24_2 , etc.) and the management station communicate via a satellite, another satellite taking over a call when the former satellite is no longer used, characterized in that, the terminals being stationary, commanding handover of calls from one satellite to another makes use of predetermined times during which at least two satellites are simultaneously visible from the area or from a portion of the area.
2. A method according to claim 1, characterized in that handover of calls involving the terminals from one satellite to another is commanded from the management station (22).
3. A method according to claim 1 or claim 2, characterized in that call handovers are commanded collectively for a plurality of terminals.
4. A method according to claim 3, characterized in that, in determining the handover time for each terminal, allowance is made for the power available and/or the availability of communication resources.
5. A method according to claim 4, characterized in that handover times are commanded so that they can be distributed over all the terminals during the period of double visibility of the satellites.
6. A method according to claim 4 or claim 5, characterized in that the handover times are distributed so that the resources used by each satellite are substantially the same.

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7. A method according to any preceding claim,
characterized in that the times of handover of calls from
one satellite to another are predefined for each
5 terminal.

8. A method according to claim 7, characterized in that
call quality is monitored for each terminal and a call is
handed over to another satellite ahead of time if the
10 call quality for a terminal falls below a predetermined
threshold, for example because of masking.

Sub 93
9. A method according to claim 7 or claim 8,
characterized in that a call is handed over to another
15 satellite ahead of time if said other satellite provides
a communication capacity greater than that of the former
satellite.

10. A method according to any preceding claim,
20 characterized in that the terrestrial areas (20_i) are
fixed.

11. A method according to any preceding claim,
characterized in that the resources allocated to a
25 terminal for a satellite include a carrier frequency and
a plurality of codes, especially Hadamard sequences,
and/or time slots.

12. A method according to any preceding claim,
30 characterized in that a single system (72) for allocating
resources (74) is provided in each terminal and/or the
management station and said resources are duplicated
during a handover period.

35 13. A method according to claim 12, characterized in that
two cells, packets or other signals to be relayed
simultaneously via two different satellites have

different carrier frequencies and preferably the same codes.

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5 14. A method according to claim 12 or claim 13, characterized in that zero power is allocated to signals on the second path before handover and zero power is allocated to signals on the first path after handover.

10 15. A method according to claim 14, characterized in that non-zero powers are allocated to both sets of cells or packets during a transition period, for example equal to a cell or packet time slot.

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15 16. A method according to any one of claims 12 to 15, characterized in that the powers allocated to the duplicated cells or packets are monitored.

20 17. A terminal for a telecommunications system using non-geosynchronous Earth satellites (S_1, S_2, S_3, S_4) and in which terrestrial areas are defined, each terminal in an area communicating with the telecommunications system via a management station (22) in that area, calls between the management station and the terminal being relayed via a satellite, and means being provided in each terminal for
25 commanding handover of calls from one satellite to another satellite, characterized in that, the terminal being stationary, handover means in said satellite include means for receiving handover command signals.

30 18. A terminal according to claim 17, characterized in that the means for commanding handover make use of predetermined times at which at least two satellites are simultaneously visible in the area or in a portion of the area.

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19. A terminal according to claim 18, characterized in that it includes means for measuring the quality of the

link to each satellite and means for bringing handover forward if the quality of the link to the satellite that is moving away falls below a predetermined threshold.

- 5 20. A terminal according to any one of claims 17 to 19, characterized in that it includes two directional antennas, one intended to be pointed toward one satellite and the other toward another satellite.
- 10 21. A terminal according to claim 20, characterized in that signals for commanding handover include signals for commanding pointing ahead of time of the antenna intended to be pointed toward the satellite due to take over the call.
- 15 ~~22.~~ A management station for a telecommunications system in which terrestrial areas are defined, each terminal in an area communicating with the telecommunications system via a management station in that area, calls between the
- 20 management station and the terminals being relayed via a satellite, and means being provided in each terminal for commanding handover of calls from a first satellite to a second satellite, which management station is
- 25 characterized in that it includes means for commanding handover of calls involving stationary terminals in the area, or in a portion of the area, using predetermined times at which at least two satellites are visible simultaneously in that area or in a portion of that area.
- 30 23. A management station according to claim 22, characterized in that it includes means for determining individual handover times for each terminal as a function of the allocation of power and/or communication resources.
- 35 24. A management station according to claim 23, characterized in that periods of handover from one

satellite to another are commanded so that they can be distributed over all of the terminals during the period of double visibility.

- 5 25. A management station according to any one of claims
22 to 24, characterized in that it includes a system for
allocating the terminals carrier frequencies divided into
non-contiguous subsets, two carriers from the same subset
being chosen to hand over a call from one satellite to
10 another.